

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF OHIO
EASTERN DIVISION

OLD RELIABLE WHOLESALE, INC.,)	
)	Case No. 5:06-cv-02389-DDD
)	
Plaintiff,)	Judge: Dowd
)	
v.)	
)	
CORNELL CORPORATION,)	
)	
Defendant.)	
)	

DECLARATION OF NEIL GOODALL

I, Neil Goodall, declare as follows:

Background Information

1. I was an employee at Cornell Corporation ("Cornell") from 1965 until I retired in 2003.
2. In 1955, I received my bachelor's degree in engineering from London University in England. I spent the year after that at the Royal School of Military Engineering.
3. I served as an officer in the Engineer Corps. of the British Army until 1964.
4. In 1965, I came to the United States and joined Cornell Corporation as a plant engineer. I was a plant engineer for a few years, and then I became Cornell Corporation's general manager. Afterward, I became president of Cornell Corporation. I retired from Cornell Corporation in July 2003.

History of Cornell Corporation

5. Cornell Corporation started as Fireproof Products Company in 1954 to manufacture a wood fiber and cement structural roof deck with the trade name PetriCal.

6. In the late 1970s Cornell built a new manufacturing plant to make urethane insulating foam to enhance the insulating properties of the PetriCal panels. Around this time, I began to experiment with a new form of roof insulation for pitched roof buildings called "nail base roof insulation." The new product was designed to provide roof insulation for difficult to insulate structures such as cathedral ceiling buildings while providing a surface for the attachment of shingles or tiles.

7. In 1979, Cornell introduced the new nail base roof insulation product: ThermaCal. ThermaCal consisted of a urethane (later called polyisocyanurate) insulation panel affixed to a wood top surface known as waferboard, which is now known as oriented strand board ("OSB").

8. At that time, Cornell was making its own polyisocyanurate insulation for use in Cornell's composite insulation panels. The ThermaCal production line mixed the insulation components in the plant and sprayed them onto the waferboard. Roofing felt was then added so that the foam insulation panel was sandwiched between a waferboard layer and a roofing felt layer.

9. Later, Cornell stopped making its own polyisocyanurate insulation and began purchasing 4' x 8' polyisocyanurate insulation panels from suppliers when it became more economical to do so. These panels had exterior layers of either felt, paper or fiberglass.

10. Over the years, Cornell manufactured a number of vented and non-vented roof insulation panels. Attached as **Exhibit 1** is a May 17, 1999 Memo I prepared to summarize Cornell's product lines and to document the name changes we made while selling each product.

**Developing Vent-Top ThermaCal
(later called Vent-Top ThermaCal 2)**

11. In 1985, the Asphalt Roofing Manufacturers Association ("ARMA") issued a technical bulletin recommending against applying asphalt shingles directly over insulation because the insulation prevented heat dissipation underneath the shingles. It had been understood for some time that heat build up may accelerate the deterioration of the shingles and reduce the life of the roof. The 1985 ARMA bulletin recommended a flow-through ventilated air space between the top of the insulation and the nailable deck to assist in heat and vapor dissipation. Attached as **Exhibit 2** is a copy of the December 1985 ARMA technical bulletin.

12. In response to this concern, which was prevalent among shingle manufacturers in the 1980s, I looked for a solution. I developed a vented roof insulation panel, which not only provided insulation under shingles but also allowed the desired ventilation under the OSB sheathing (to which shingles were attached). Ventilation under the sheathing reduced shingle temperatures in hot climates and diminished ice damming in cold climates.

Manufacturing the Vent-Top ThermaCal Panel

13. In 1986, Cornell introduced Vent-Top ThermaCal, its first ventilated roof insulation panel. Attached as **Exhibit 3** is an October 1986 letter from Cornell to its distributors introducing the Vent-Top ThermaCal product.

14. The first Vent-Top ThermaCal panels were composite structures that consisted the following: 1) a top layer of OSB, 2) a middle air space created by spacer strips and 3) a bottom layer consisting of a combination OSB/urethane insulation panel (this bottom layer was essentially the ThermaCal product we introduced in 1979).

15. The ventilation featured in the Vent-Top ThermaCal panels allowed air to pass below the top layer of OSB, helping to keep shingles cool in warm weather. The venting also allowed for the removal of any moisture that entered the roofing structure.

16. Cornell shipped its first order of Vent-Top ThermaCal panels in March 1987.

17. Cornell advertised the Vent-Top ThermaCal independently and in McGraw-Hill Construction Sweets Catalog ("Sweets Catalog"), a publication to which most major architects in the United States subscribe. Attached as **Exhibit 4** is also an April 1987 Vent-Top ThermaCal brochure that was used to advertise the product in 1987.

18. In the initial months of producing Vent-Top ThermaCal, we created the air space with wood strips that ran the width of the panel. In November 1987, we shipped our first job using small wood spacer blocks in place of the continuous wood strips. This created a better air space and allowed ventilation both up and across the slope. We eventually changed the spacer blocks in the Vent-Top ThermaCal to measure 1-3/8" x 5" because we found that these measurements produced ideal structural performance.

19. Cornell prepared its Vent-Top ThermaCal catalog and sent it to the printer in July 1987 as it had to be delivered to Sweets Catalog in early September 1987. In December 1987, we mailed out our catalog insert COR-88 showing the small wood spacer blocks (side view). The catalog is attached as **Exhibit 5**.

20. In November 1987, Cornell provided installation instructions to customers to assist with the installation of the Vent-Top ThermaCal panels. Attached as **Exhibit 6** is a copy of the 1987 installation instructions. Two-inch square spacer blocks are shown in the instruction pages.

21. A description of the earliest ventilated roof insulation invention is attached as **Exhibit 7**, which is based on my application for a patent in November 1986. The early version of the patent application showed continuous spacer strips. However, given Cornell's decision to substitute short spacer blocks for the continuous spacer strips, I wrote a December 2, 1987 letter to Cornell's patent attorney describing this change. My letter is attached as **Exhibit 8** and includes two drawings labeled Systems "C" and "D," which depict the use of spacer blocks in place of continuous spacer strips.

22. A photograph of an architect's sample of the 1988 version of the Vent-Top ThermaCal using spacer blocks is attached as **Exhibit 9**.

23. By December 1987, Cornell had sold orders of Vent-Top ThermaCal that were made with two-inch square spacer blocks (to create the air space). Cornell desired to use this method to make the Vent-Top ThermaCal product. It saved on materials, was simpler to build, provided a more fully ventilated area, and allowed more air flow in a lateral direction. (See **Exhibit 8**, December 1987 Letter to Attorney.) I believed this was an obvious improvement to our original Vent-Top ThermaCal product, which had featured longer wood spacer strips.

24. In March 1988, Cornell provided new installation instructions to customers to assist with the installation of the Vent-Top ThermaCal panels. Attached as **Exhibit 10** is a copy of the March 1988 installation instructions. In the March 1988

version of the installation instructions, the two-inch square spacer blocks reflected in earlier instructions were replaced with wood spacer blocks measuring 1-3/8" x 5".

25. In 1989, we updated our brochure drawings to highlight the cross-ventilation feature of the Vent-Top ThermaCal panel. The brochure was printed in July or August 1988 for inclusion in the 1989 Sweets edition, which was released to the public in January each year. Attached as **Exhibit 11** is Cornell's 1989 brochure, which appeared in Sweets Catalog.

Patent Application for Vent-Top ThermaCal Panel

26. I sought to patent the Vent-Top ThermaCal panel in November 1986. Attached as **Exhibit 12** is a January 30, 1987 letter from our patent attorney regarding filing my patent application. After the initial patent application, I filed a continuation of the patent application because my attorneys missed a fee deadline. At that time, I asked my patent attorney to include claims regarding the short spacer strips and the spacer blocks in the continuation application. (See **Exhibit 13**, Dec. 8, 1987 Letter to Merchant Gould.)

27. In March 1987, Cornell Corporation received a letter and brochure from George Elmes, President of Branch River Foam Plastics Inc. That letter and brochure are attached as **Exhibit 14**. Mr. Elmes explained that he received a piece of literature explaining Cornell's Vent-Top ThermaCal product and noticed the asterisk indicating that a patent was applied for. Mr. Elmes sent Cornell a piece of literature showing the Air-Flo product, which he indicated had been in use since 1982.

28. The Branch River Air-Flo product was also designed to insulate and ventilate cathedral ceilings. It combined an insulation core of EPS with integral

ventilation channels and a pressure laminated nailable exterior surface. Because Cornell received Mr. Elmes' letter while the patent application was pending, I provided the letter to our patent attorney, and it was made available to the patent examiner.

29. Ultimately, in 1988, the U.S. Patent and Trademark Office rejected my patent application, rejecting all of my seven claims for the Vent-Top ThermaCal based on the following prior art: U.S. Patents Sohda 3,343,474; Sohda 3,368,473; Forrest 4,635,419; Ward 4,635,423; Kloote 3,003,810; and French Patent 2,563,458. (*See Exhibit 15*, June 2, 1988, Merchant Gould Letter with opinion from U.S. Patent and Trademark Office.) The Patent Examiner concluded that "the subject matter of these claims would have been obvious to the person of ordinary skill in this art—the design engineer—with these references before him particularly at the time of the reduction to practice of the subject matter of these claims." (U.S. Patent and Trademark Office Opinion at 5.)

30. Attached as **Exhibit 16** is the December 7, 1987 Letter from our patent attorney responding to my questions regarding the variations of our patent application. Our attorney opined that using spacer blocks would most likely be covered under our applied-for patent under the doctrine of equivalents. He also concluded that if our patent was considered prior art, the use of spacer blocks would be an obvious improvement.

Ventilated Nail Base Insulation (later known as Vent-Top ThermaCal 1)

31. In 1987, Cornell contemplated making Vent-Top ThermaCal with only one layer of waferboard, but decided against it. On April 7, 1987, I had learned about PANOFLO, a vented roof insulation manufactured by Universal Building Specialties of Lakeland, Florida. PANOFLO was a vented roof insulation product using a waferboard

top surface and wood spacer strips over phenolic foam insulation. Cornell decided against manufacturing a single layer product at that time because we did not compete with PANOFLO in most market areas.

32. In 1991, Cornell Corporation became aware that a competitor, Atlas Roofing, was selling a ventilated product with one layer of waferboard. (Attached as **Exhibit 17** is a December 12, 1993 Memo outlining the history of the Vent-Top ThermaCal product.) The products using one layer of waferboard were less expensive than Cornell's Vent-Top ThermaCal. In order to meet market demands, Cornell Corporation decided to manufacture its own ventilated product with a single layer of waferboard. Significant savings resulted from eliminating the second OSB layer. The product was therefore less expensive to sell to customers, and it soon became Cornell's most popular insulation panel.

33. While other, larger manufacturers chose to cut costs of ventilated panels by using foam spacer blocks, I believed that wood spacer blocks resulted in a better panel. Our success with the wood blocks (which does make the Cornell product slightly more expensive) is reflected in Cornell's continued success with architects who continue to specify the Vent-Top ThermaCal 1 product line.

34. Cornell's first shipment of a vented panel using one layer of OSB was made in 1993. A photograph of an architect's sample of the early version of the single-layer Vent-Top ThermaCal is attached as **Exhibit 18**.

35. When I left Cornell in July 2003, both the Vent-Top ThermaCal 1 and the Vent-Top ThermaCal 2 were made with a layer of polyisocyanurate insulation. I

understand that Cornell continues to manufacture these products using polyisocyanurate insulation.

AJC Inventsabord

36. In 1993, Cornell became aware of patent 5,069,950 ("the '950 patent"). I asked my patent attorneys at Merchant & Gould for their opinion on whether our product using two OSB layers infringed the patent and whether our proposed product using one OSB layer would infringe the patent. Our patent attorney informed us that neither Cornell product would literally infringe the patent and that both Cornell products would be covered by prior art. The September 1993 letter from Cornell's patent attorney is attached as **Exhibit 19**.

37. Attached as **Exhibit 20** is a memo that I prepared on July 1, 1993 discussing the ventilated insulation products offered by competitors.

38. In 1997, I received an architect's sample of the AJC Inventsabord product, and a photograph of that sample is attached as **Exhibit 21**. It was my understanding at that time that the AJC Inventsabord was produced under the '950 patent.

39. I declare under penalty of perjury under the laws of the United States of America that the foregoing statements are true and correct.

Dated: 7/7/08



Neil Goodall